



# 2

## SEQUENCE LISTING

&lt;110&gt; Osslund, Timothy

&lt;120&gt; G-CSF ANALOG COMPOSITIONS AND METHODS

&lt;130&gt; 01017/38834F

&lt;140&gt; US 10/032,108

&lt;141&gt; 2001-12-20

&lt;150&gt; US 09/754,532

&lt;151&gt; 2001-01-03

&lt;150&gt; US 09/304,186

&lt;151&gt; 1999-05-03

&lt;150&gt; US 09/027,508

&lt;151&gt; 1998-02-20

&lt;150&gt; US 08/956,812

&lt;151&gt; 1987-10-23

&lt;150&gt; US 08/448,716

&lt;151&gt; 1995-05-24

&lt;150&gt; US 08/010,099

&lt;151&gt; 1993-01-28

&lt;160&gt; 110

&lt;170&gt; Patent-In ver. 3.1

&lt;210&gt; 1

&lt;211&gt; 565

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; CDS

&lt;223&gt; 30..554

&lt;400&gt; 1

tctagaaaaa accaaggagg taataaata atg act cca tta ggt cct gct tct	53
Met Thr Pro Leu Gly Pro Ala Ser	
1 5	
tct ctg ccg caa agc ttt ctg ctg aaa tgt ctg gaa cag gtt cgt aaa	101
Ser Leu Pro Gln Ser Phe Leu Leu Lys Cys Leu Glu Gln Val Arg Lys	
10 15 20	
atc cag ggt gac ggt gct gca ctg caa gaa aaa ctg tgc gct act tac	149
Ile Gln Gly Asp Gly Ala Ala Leu Gln Glu Lys Leu Cys Ala Thr Tyr	
25 30 35 40	
aaa ctg tgc cat ccg gaa gaa ctg gta ctg ctg ggt cat tct ctt ggg	197
Lys Leu Cys His Pro Glu Glu Leu Val Leu Leu Gly His Ser Leu Gly	
45 50 55	
atc ccg tgg gct ccg ctg tct tct tgc cca tct caa gct ctt cag ctg	245
Ile Pro Trp Ala Pro Leu Ser Ser Cys Pro Ser Gln Ala Leu Gln Leu	
60 65 70	

RECEIVED  
MAR 04 2003  
GROUP 3600

gct ggt tgt ctg tct caa ctg cat tct ggt ctg ttc ctg tat cag ggt Ala Gly Cys Leu Ser Gln Leu His S r Gly Leu Ph Leu Tyr Gln Gly 75 80 85	293
ctt ctg caa gct ctg gaa ggt atc tct ccg gaa ctg ggt ccg act ctg Leu Leu Gln Ala Leu Glu Gly Ile Ser Pro Glu Leu Gly Pro Thr Leu 90 95 100	341
gac act ctg cag cta gat gta gct gac ttt gct act act att tgg caa Asp Thr Leu Gln Leu Asp Val Ala Asp Phe Ala Thr Thr Ile Trp Gln 105 110 115 120	389
cag atg gaa gag ctc ggt atg gca cca gct ctg caa ccg act caa ggt Gln Met Glu Glu Leu Gly Met Ala Pro Ala Leu Gln Pro Thr Gln Gly 125 130 135	437
gct atg ccg gca ttc gct tct gca ttc cag cgt cgt gca gga ggt gta Ala Met Pro Ala Phe Ala Ser Ala Phe Gln Arg Arg Ala Gly Gly Val 140 145 150	485
ctg gtt gct tct cat ctg caa tct ttc ctg gaa gta tct tac cgt gtt Leu Val Ala Ser His Leu Gln Ser Phe Leu Glu Val Ser Tyr Arg Val 155 160 165	533
ctg cgt cat ctg gct cag ccg taatagaatt c Leu Arg His Leu Ala Gln Pro 170 175	565

<210> 2  
 <211> 175  
 <212> PRT  
 <213> Homo sapien

<400> 2  
 Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
 1 5 10 15  
 Lys Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu  
 20 25 30  
 Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
 35 40 45  
 Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
 50 55 60  
 Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
 65 70 75 80  
 Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
 85 90 95  
 Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
 100 105 110  
 Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
 115 120 125  
 Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
 130 135 140

Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala S r His Leu Gln Ser  
 145 150 155 160

Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
 165 170 175

<210> 3  
 <211> 24  
 <212> DNA  
 <213> Artificial sequence

<220>  
 <223> Synthetic primer

<400> 3  
 ctttctgctg cggtgtctgg aaca

24

<210> 4  
 <211> 23  
 <212> DNA  
 <213> Artificial sequence

<220>  
 <223> Synthetic primer

<400> 4  
 acaggttcgt cgtatccagg gtg

23

<210> 5  
 <211> 23  
 <212> DNA  
 <213> Artificial sequence

<220>  
 <223> Synthetic primer

<400> 5  
 cactgcaaga acgtctgtgc gtc

23

<210> 6  
 <211> 23  
 <212> DNA  
 <213> Artificial sequence

<220>  
 <223> Synthetic primer

<400> 6  
 cgctacttac cgtctgtgcc atc

23

<210> 7  
 <211> 24  
 <212> DNA  
 <213> Artificial sequence

<220>  
 <223> Synthetic primer

<400> 7  
 ctttctgctg cggtgtctgg aaca

24

<210> 8  
 <211> 23  
 <212> DNA  
 <213> Artificial sequence  
  
 <220>  
 <223> Synthetic primer  
  
 <400> 8  
 acaggttcgt cgtatccagg gtg 23  
  
 <210> 9  
 <211> 23  
 <212> DNA  
 <213> Artificial sequence  
  
 <220>  
 <223> Synthetic primer  
  
 <400> 9  
 cactgcaaga acgtctgtgc gct 23  
  
 <210> 10  
 <211> 24  
 <212> DNA  
 <213> Artificial sequence  
  
 <220>  
 <223> Synthetic primer  
  
 <400> 10  
 ctttctgctg cggtgtctgg aaca 24  
  
 <210> 11  
 <211> 23  
 <212> DNA  
 <213> Artificial sequence  
  
 <220>  
 <223> Synthetic primer  
  
 <400> 11  
 acaggttcgt cgtatccagg gtg 23  
  
 <210> 12  
 <211> 23  
 <212> DNA  
 <213> Artificial sequence  
  
 <220>  
 <223> Synthetic primer  
  
 <400> 12  
 cgctacttac cgtctgtccc atc 23  
  
 <210> 13  
 <211> 24  
 <212> DNA  
 <213> Artificial sequence  
  
 <220>  
 <223> Synthetic primer

<400> 13	
ctttctgctg cgttgtctgg aaca	24
<210> 14	
<211> 23	
<212> DNA	
<213> Artificial sequence	
<220>	
<223> Synthetic primer	
<400> 14	
cactgcaaga acgtctgtgc gct	23
<210> 15	
<211> 23	
<212> DNA	
<213> Artificial sequence	
<220>	
<223> Synthetic primer	
<400> 15	
cgctacttac cgtctgtgcc atc	23
<210> 16	
<211> 23	
<212> DNA	
<213> Artificial sequence	
<220>	
<223> Synthetic primer	
<400> 16	
acaggttcgt cgtatccagg gtg	23
<210> 17	
<211> 23	
<212> DNA	
<213> Artificial sequence	
<220>	
<223> Synthetic primer	
<400> 17	
cactgcaaga acgtctgtgc gct	23
<210> 18	
<211> 23	
<212> DNA	
<213> Artificial sequence	
<220>	
<223> Synthetic primer	
<400> 18	
cgctacttac cgtctgtgcc atc	23
<210> 19	
<211> 24	
<212> DNA	
<213> Artificial sequence	

<220>		
<223>	Synthetic primer	
<400>	19	
	ctttctgctg cgttgtctgg aaca	24
<210>	20	
<211>	23	
<212>	DNA	
<213>	Artificial sequence	
<220>		
<223>	Synthetic primer	
<400>	20	
	acaggttcgt cgtatccagg gtg	23
<210>	21	
<211>	23	
<212>	DNA	
<213>	Artificial sequence	
<220>		
<223>	Synthetic primer	
<400>	21	
	cactgcaaga acgtctgtgc gct	23
<210>	22	
<211>	23	
<212>	DNA	
<213>	Artificial sequence	
<220>		
<223>	Synthetic primer	
<400>	22	
	cgctacttac cgtctgtgcc atc	23
<210>	23	
<211>	23	
<212>	DNA	
<213>	Artificial sequence	
<220>		
<223>	Synthetic primer	
<400>	23	
	tctgctgaaa gctctggaac agg	23
<210>	24	
<211>	23	
<212>	DNA	
<213>	Artificial sequence	
<220>		
<223>	Synthetic primer	
<400>	24	
	cttgccatc tgaagctctt cag	23

<210> 25  
 <211> 37  
 <212> DNA  
 <213> Artificial sequence

<220>  
 <223> Synthetic primer

<400> 25  
 gaaaaactgt ccgctactta caaactgtcc catccgg 37

<210> 26  
 <211> 22  
 <212> DNA  
 <213> Artificial sequence

<220>  
 <223> Synthetic primer

<400> 26  
 ttcgtaaaat cgcgggtgac gg 22

<210> 27  
 <211> 22  
 <212> DNA  
 <213> Artificial sequence

<220>  
 <223> Synthetic primer

<400> 27  
 tcacatctggct gcgccgtaat ag 22

<210> 28  
 <211> 22  
 <212> DNA  
 <213> Artificial sequence

<220>  
 <223> Synthetic primer

<400> 28  
 ccgtgttctg gctcatctgg ct 22

<210> 29  
 <211> 24  
 <212> DNA  
 <213> Artificial sequence

<220>  
 <223> Synthetic primer

<400> 29  
 gaagtatctt acgctgttct gcgt 24

<210> 30  
 <211> 25  
 <212> DNA  
 <213> Artificial sequence

<220>

<223> Synthetic primer  
 <400> 30  
 gaagtatctt actaagttct gcgtc 25  
 <210> 31  
 <211> 22  
 <212> DNA  
 <213> Artificial sequence  
 <220>  
 <223> Synthetic primer  
 <400> 31  
 cgctacttac gcactgtgcc at 22  
 <210> 32  
 <211> 22  
 <212> DNA  
 <213> Artificial sequence  
 <220>  
 <223> Synthetic primer  
 <400> 32  
 caaactgtgc aagccggaag ag 22  
 <210> 33  
 <211> 22  
 <212> DNA  
 <213> Artificial sequence  
 <220>  
 <223> Synthetic primer  
 <400> 33  
 catccggaag cactggtact gc 22  
 <210> 34  
 <211> 23  
 <212> DNA  
 <213> Artificial sequence  
 <220>  
 <223> Synthetic primer  
 <400> 34  
 ggaacagggt gctaaaatcc agg 23  
 <210> 35  
 <211> 25  
 <212> DNA  
 <213> Artificial sequence  
 <220>  
 <223> Synthetic primer  
 <400> 35  
 gaacagggtc gtgcgatcca gggtg 25  
 <210> 36



<211> 22  
 <212> DNA  
 <213> Artificial sequence  
  
 <220>  
 <223> Synthetic primer  
  
 <400> 36  
 gaaatgtctg gcacaggttc gt 22  
  
 <210> 37  
 <211> 19  
 <212> DNA  
 <213> Artificial sequence  
  
 <220>  
 <223> Synthetic primer  
  
 <400> 37  
 tccaggggtgc cggctgctgc 19  
  
 <210> 38  
 <211> 23  
 <212> DNA  
 <213> Artificial sequence  
  
 <220>  
 <223> Synthetic primer  
  
 <400> 38  
 aagagctcgg tgaggcacca gct 23  
  
 <210> 39  
 <211> 23  
 <212> DNA  
 <213> Artificial sequence  
  
 <220>  
 <223> Synthetic primer  
  
 <400> 39  
 ctcaagggtgc tgagccggca ttc 23  
  
 <210> 40  
 <211> 20  
 <212> DNA  
 <213> Artificial sequence  
  
 <220>  
 <223> Synthetic primer  
  
 <400> 40  
 gagctcggtc tggcaccagc 20  
  
 <210> 41  
 <211> 21  
 <212> DNA  
 <213> Artificial sequence  
  
 <220>  
 <223> Synthetic primer  
  
 <400> 41

tcaaggtgct ctgccggcat t	21
<210> 42	
<211> 23	
<212> DNA	
<213> Artificial sequence	
<220>	
<223> Synthetic primer	
<400> 42	
tctgccgcaa gcctttctgc tga	23
<210> 43	
<211> 24	
<212> DNA	
<213> Artificial sequence	
<220>	
<223> Synthetic primer	
<400> 43	
ctttctgctg gcatgtctgg aaca	24
<210> 44	
<211> 24	
<212> DNA	
<213> Artificial sequence	
<220>	
<223> Synthetic primer	
<400> 44	
ctatttggca agcgatggaa gagc	24
<210> 45	
<211> 21	
<212> DNA	
<213> Artificial sequence	
<220>	
<223> Synthetic primer	
<400> 45	
cagatggaag cgctcggtat g	21
<210> 46	
<211> 20	
<212> DNA	
<213> Artificial sequence	
<220>	
<223> Synthetic primer	
<400> 46	
gagctcggtc tggcaccagc	20
<210> 47	
<211> 21	
<212> DNA	
<213> Artificial sequence	
<220>	

<223> Synthetic primer  
 <400> 47  
 tcaaggtgct ctgccggcat t 21  
 <210> 48  
 <211> 22  
 <212> DNA  
 <213> Artificial sequence  
 <220>  
 <223> Synthetic primer  
 <400> 48  
 gaaatgtctg gcacaggttc gt 22  
 <210> 49  
 <211> 19  
 <212> DNA  
 <213> Artificial sequence  
 <220>  
 <223> Synthetic primer  
 <400> 49  
 ttccggagcg cacagttag 19  
 <210> 50  
 <211> 23  
 <212> DNA  
 <213> Artificial sequence  
 <220>  
 <223> Synthetic primer  
 <400> 50  
 cgagaaggcc tcgggtgtca aac 23  
 <210> 51  
 <211> 22  
 <212> DNA  
 <213> Artificial sequence  
 <220>  
 <223> Synthetic primer  
 <400> 51  
 atgccaaatt gcagtagcaa ag 22  
 <210> 52  
 <211> 24  
 <212> DNA  
 <213> Artificial sequence  
 <220>  
 <223> Synthetic primer  
 <400> 52  
 acaacggttt aacgtcatcg ttcc 24  
 <210> 53  
 <211> 22

<212> DNA  
 <213> Artificial sequence  
  
 <220>  
 <223> Synthetic primer  
  
 <400> 53  
 atcagctact gctagctgca ga 22  
  
 <210> 54  
 <211> 23  
 <212> DNA  
 <213> Artificial sequence  
  
 <220>  
 <223> Synthetic primer  
  
 <400> 54  
 tcagtcgatg acgatcgacg tct 23  
  
 <210> 55  
 <211> 22  
 <212> DNA  
 <213> Artificial sequence  
  
 <220>  
 <223> Synthetic primer  
  
 <400> 55  
 ttacgaaccg cttccagaca tt 22  
  
 <210> 56  
 <211> 25  
 <212> DNA  
 <213> Artificial sequence  
  
 <220>  
 <223> Synthetic primer  
  
 <400> 56  
 taaaatgctt ggcgaaggctc tgtaa 25  
  
 <210> 57  
 <211> 22  
 <212> DNA  
 <213> Artificial sequence  
  
 <220>  
 <223> Synthetic primer  
  
 <400> 57  
 gtagcaaagc cagctacatc ta 22  
  
 <210> 58  
 <211> 25  
 <212> DNA  
 <213> Artificial sequence  
  
 <220>  
 <223> Synthetic primer  
  
 <400> 58

catcatcggtt tacgtcgatg tagat	25
<210> 59	
<211> 20	
<212> DNA	
<213> Artificial sequence	
<220>	
<223> Synthetic primer	
<400> 59	
ccaagagaag caccagcag	20
<210> 60	
<211> 22	
<212> DNA	
<213> Artificial sequence	
<220>	
<223> Synthetic primer	
<400> 60	
agggttctct tcgtgggtcg tc	22
<210> 61	
<211> 20	
<212> DNA	
<213> Artificial sequence	
<220>	
<223> Synthetic primer	
<400> 61	
cactggcggt gataatgagc	20
<210> 62	
<211> 19	
<212> DNA	
<213> Artificial sequence	
<220>	
<223> Synthetic primer	
<400> 62	
ctaggccagg cattactgg	19
<210> 63	
<211> 21	
<212> DNA	
<213> Artificial sequence	
<220>	
<223> Synthetic primer	
<400> 63	
ccactggcgg tgatactgag c	21
<210> 64	
<211> 33	
<212> DNA	
<213> Artificial sequence	

<220>  
 <223> Synthetic primer  
  
 <400> 64  
 agcagaaagc tttccggcag agaagaagca gga 33  
  
 <210> 65  
 <211> 54  
 <212> DNA  
 <213> Artificial sequence  
  
 <220>  
 <223> Synthetic primer  
  
 <400> 65  
 gccgcaaagc tttctgctga aatgtctgga agaggttcgt aaaatccagg gtga 54  
  
 <210> 66  
 <211> 59  
 <212> DNA  
 <213> Artificial sequence  
  
 <220>  
 <223> Synthetic primer  
  
 <400> 66  
 ctggaatgca gaagcaaagc ccggcatagc accttcagtc gggtgcagag ctggtgccca 59  
  
 <210> 67  
 <211> 175  
 <212> PRT  
 <213> Artificial sequence  
  
 <220>  
 <223> G-CSF analog  
  
 <400> 67  
 Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
 1 5 10 15  
 Arg Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu  
 20 25 30  
 Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
 35 40 45  
 Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
 50 55 60  
 Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
 65 70 75 80  
 Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
 85 90 95  
 Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
 100 105 110  
 Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
 115 120 125  
 Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
 130 135 140

Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
 145 150 155 160

Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
 165 170 175

<210> 68  
 <211> 175  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> G-CSF analog

<400> 68  
 Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
 1 5 10 15

Lys Cys Leu Glu Gln Val Arg Arg Ile Gln Gly Asp Gly Ala Ala Leu  
 20 25 30

Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
 35 40 45

Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
 50 55 60

Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
 65 70 75 80

Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
 85 90 95

Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
 100 105 110

Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
 115 120 125

Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
 130 135 140

Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
 145 150 155 160

Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
 165 170 175

<210> 69  
 <211> 175  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> G-CSF analog

<400> 69  
 Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
 1 5 10 15

Lys Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu

20										25										30										
Gln	Glu	Arg	Leu	Cys	Ala	Thr	Tyr	Lys	Leu	Cys	His	Pro	Glu	Glu	Leu															
		35					40					45																		
Val	Leu	Leu	Gly	His	Ser	Leu	Gly	Ile	Pro	Trp	Ala	Pro	Leu	Ser	Ser															
	50					55					60																			
Cys	Pro	Ser	Gln	Ala	Leu	Gln	Leu	Ala	Gly	Cys	Leu	Ser	Gln	Leu	His															
	65				70				75					80																
Ser	Gly	Leu	Phe	Leu	Tyr	Gln	Gly	Leu	Leu	Gln	Ala	Leu	Glu	Gly	Ile															
			85					90						95																
Ser	Pro	Glu	Leu	Gly	Pro	Thr	Leu	Asp	Thr	Leu	Gln	Leu	Asp	Val	Ala															
		100					105						110																	
Asp	Phe	Ala	Thr	Thr	Ile	Trp	Gln	Gln	Met	Glu	Glu	Leu	Gly	Met	Ala															
	115					120						125																		
Pro	Ala	Leu	Gln	Pro	Thr	Gln	Gly	Ala	Met	Pro	Ala	Phe	Ala	Ser	Ala															
	130					135					140																			
Phe	Gln	Arg	Arg	Ala	Gly	Gly	Val	Leu	Val	Ala	Ser	His	Leu	Gln	Ser															
	145				150				155				160																	
Phe	Leu	Glu	Val	Ser	Tyr	Arg	Val	Leu	Arg	His	Leu	Ala	Gln	Pro																
			165				170						175																	

<210> 70  
 <211> 175  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> G-CSF analog

<400> 70

Met	Thr	Pro	Leu	Gly	Pro	Ala	Ser	Ser	Leu	Pro	Gln	Ser	Phe	Leu	Leu
1				5					10				15		
Lys	Cys	Leu	Glu	Gln	Val	Arg	Lys	Ile	Gln	Gly	Asp	Gly	Ala	Ala	Leu
		20					25					30			
Gln	Glu	Lys	Leu	Cys	Ala	Thr	Tyr	Arg	Leu	Cys	His	Pro	Glu	Glu	Leu
		35					40					45			
Val	Leu	Leu	Gly	His	Ser	Leu	Gly	Ile	Pro	Trp	Ala	Pro	Leu	Ser	Ser
	50					55					60				
Cys	Pro	Ser	Gln	Ala	Leu	Gln	Leu	Ala	Gly	Cys	Leu	Ser	Gln	Leu	His
	65				70				75					80	
Ser	Gly	Leu	Phe	Leu	Tyr	Gln	Gly	Leu	Leu	Gln	Ala	Leu	Glu	Gly	Ile
			85					90						95	
Ser	Pro	Glu	Leu	Gly	Pro	Thr	Leu	Asp	Thr	Leu	Gln	Leu	Asp	Val	Ala
		100					105						110		
Asp	Phe	Ala	Thr	Thr	Ile	Trp	Gln	Gln	Met	Glu	Glu	Leu	Gly	Met	Ala
	115					120						125			



Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala S r Ala  
 130 135 140

Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
 145 150 155 160

Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
 165 170 175

<210> 71  
 <211> 175  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> G-CSF analog

<400> 71  
 Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
 1 5 10 15

Arg Cys Leu Glu Gln Val Arg Arg Ile Gln Gly Asp Gly Ala Ala Leu  
 20 25 30

Gln Glu Arg Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
 35 40 45

Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
 50 55 60

Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
 65 70 75 80

Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
 85 90 95

Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
 100 105 110

Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
 115 120 125

Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
 130 135 140

Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
 145 150 155 160

Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
 165 170 175

<210> 72  
 <211> 175  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> G-CSF analog

<400> 72  
 Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
 1 5 10 15

Arg Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu  
                   20                  25                  30  
 Gln Glu Arg Leu Cys Ala Thr Tyr Arg Leu Cys His Pro Glu Glu Leu  
                   35                  40                  45  
 Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
                   50                  55                  60  
 Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
                   65                  70                  75                  80  
 Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
                   85                  90                  95  
 Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
                   100                  105                  110  
 Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
                   115                  120                  125  
 Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
                   130                  135                  140  
 Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
                   145                  150                  155                  160  
 Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
                   165                  170                  175

<210> 73  
 <211> 175  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> G-CSF analog

<400> 73  
 Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
           1                  5                  10                  15  
 Lys Cys Leu Glu Gln Val Arg Arg Ile Gln Gly Asp Gly Ala Ala Leu  
                   20                  25                  30  
 Gln Glu Arg Leu Cys Ala Thr Tyr Arg Leu Cys His Pro Glu Glu Leu  
                   35                  40                  45  
 Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
                   50                  55                  60  
 Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
                   65                  70                  75                  80  
 Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
                   85                  90                  95  
 Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
                   100                  105                  110  
 Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
                   115                  120                  125

Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
 130 135 140

Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
 145 150 155 160

Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
 165 170 175

<210> 74  
 <211> 175  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> G-CSF analog

<400> 74  
 Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
 1 5 10 15

Arg Cys Leu Glu Gln Val Arg Arg Ile Gln Gly Asp Gly Ala Ala Leu  
 20 25 30

Gln Glu Arg Leu Cys Ala Thr Tyr Arg Leu Cys His Pro Glu Glu Leu  
 35 40 45

Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
 50 55 60

Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
 65 70 75 80

Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
 85 90 95

Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
 100 105 110

Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
 115 120 125

Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
 130 135 140

Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
 145 150 155 160

Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
 165 170 175

<210> 75  
 <211> 175  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> G-CSF analog

<400> 75  
 Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu

1	5	10	15
Arg Cys Leu Glu Gln Val Arg Arg Ile Gln Gly Asp Gly Ala Ala Leu	20	25	30
Gln Glu Lys Leu Cys Ala Thr Tyr Arg Leu Cys His Pro Glu Glu Leu	35	40	45
Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser	50	55	60
Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His	65	70	75
Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile	85	90	95
Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala	100	105	110
Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala	115	120	125
Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala	130	135	140
Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser	145	150	155
Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro	165	170	175
<210> 76			
<211> 175			
<212> PRT			
<213> Artificial sequence			
<220>			
<223> G-CSF analog			
<400> 76			
Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu	1	5	10
Lys Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu	20	25	30
Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu	35	40	45
Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser	50	55	60
Cys Pro Ser Glu Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His	65	70	75
Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile	85	90	95
Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala	100	105	110
Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala			

115	120	125
Pro Ala Leu Gln Pro Thr Gln Gly Ala Met	Pro Ala Phe Ala Ser Ala	
130	135	140
Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser		
145	150	155 160
Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro		
165	170	175
<210> 77		
<211> 175		
<212> PRT		
<213> Artificial sequence		
<220>		
<223> G-CSF analog		
<400> 77		
Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu		
1	5	10 15
Lys Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu		
20	25	30
Gln Glu Lys Leu Ser Ala Thr Tyr Lys Leu Ser His Pro Glu Glu Leu		
35	40	45
Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser		
50	55	60
Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His		
65	70	75 80
Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile		
85	90	95
Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala		
100	105	110
Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala		
115	120	125
Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala		
130	135	140
Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser		
145	150	155 160
Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro		
165	170	175

<210> 78  
 <211> 175  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> G-CSF analog

<400> 78  
Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
1 5 10 15  
Lys Cys Leu Glu Gln Val Arg Lys Ile Ala Gly Asp Gly Ala Ala Leu  
20 25 30  
Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
35 40 45  
Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
50 55 60  
Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
65 70 75 80  
Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
85 90 95  
Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
100 105 110  
Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
115 120 125  
Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
130 135 140  
Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
145 150 155 160  
Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
165 170 175

<210> 79  
<211> 175  
<212> PRT  
<213> Artificial sequence

<220>  
<223> G-CSF analog

<400> 79  
Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
1 5 10 15  
Lys Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu  
20 25 30  
Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
35 40 45  
Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
50 55 60  
Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
65 70 75 80  
Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
85 90 95  
Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
100 105 110

Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
115 120 125  
Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
130 135 140  
Phe Gln Arg Arg Ala Gly Gly Val L u Val Ala Ser His Leu Gln Ser  
145 150 155 160  
Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Ala Pro  
165 170 175

<210> 80  
<211> 175  
<212> PRT  
<213> Artificial sequence

<220>  
<223> G-CSF analog

<400> 80  
Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
1 5 10 15  
Lys Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu  
20 25 30  
Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
35 40 45  
Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
50 55 60  
Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
65 70 75 80  
Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
85 90 95  
Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
100 105 110  
Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
115 120 125  
Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
130 135 140  
Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
145 150 155 160  
Phe Leu Glu Val Ser Tyr Arg Val Leu Ala His Leu Ala Gln Pro  
165 170 175

<210> 81  
<211> 175  
<212> PRT  
<213> Artificial sequence

<220>  
<223> G-CSF analog

<400> 81  
Met Thr Pro Leu Gly Pro Ala S r Ser Leu Pro Gln Ser Ph Leu Leu  
1 5 10 15  
Lys Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu  
20 25 30  
Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
35 40 45  
Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
50 55 60  
Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
65 70 75 80  
Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
85 90 95  
Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
100 105 110  
Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
115 120 125  
Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
130 135 140  
Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
145 150 155 160  
Phe Leu Glu Val Ser Tyr Ala Val Leu Arg His Leu Ala Gln Pro  
165 170 175

<210> 82  
<211> 174  
<212> PRT  
<213> Artificial sequence

<220>  
<223> G-CSF analog

<400> 82  
Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
1 5 10 15  
Lys Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu  
20 25 30  
Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
35 40 45  
Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
50 55 60  
Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
65 70 75 80  
Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
85 90 95  
Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
100 105 110



Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
115 120 125

Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
130 135 140

Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
145 150 155 160

Phe Leu Glu Val Ser Tyr Val Leu Arg His Leu Ala Gln Pro  
165 170

<210> 83  
<211> 175  
<212> PRT  
<213> Artificial sequence

<220>  
<223> G-CSF analog

<400> 83  
Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
1 5 10 15

Lys Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu  
20 25 30

Gln Glu Lys Leu Cys Ala Thr Tyr Ala Leu Cys His Pro Glu Glu Leu  
35 40 45

Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
50 55 60

Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
65 70 75 80

Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
85 90 95

Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
100 105 110

Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
115 120 125

Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
130 135 140

Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
145 150 155 160

Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
165 170 175

<210> 84  
<211> 175  
<212> PRT  
<213> Artificial sequence

<220>  
<223> G-CSF analog

<400> 84

Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
1 5 10 15

Lys Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu  
20 25 30

Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys Lys Pro Glu Glu Leu  
35 40 45

Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
50 55 60

Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
65 70 75 80

Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
85 90 95

Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
100 105 110

Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
115 120 125

Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
130 135 140

Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
145 150 155 160

Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
165 170 175

<210> 85

<211> 175

<212> PRT

<213> Artificial sequence

<220>

<223> G-CSF analog

<400> 85

Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
1 5 10 15

Lys Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu  
20 25 30

Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Ala Leu  
35 40 45

Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
50 55 60

Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
65 70 75 80

Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
85 90 95

Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
100 105 110

Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
115 120 125

Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
130 135 140

Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
145 150 155 160

Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
165 170 175

<210> 86

<211> 175

<212> PRT

<213> Artificial sequence

<220>

<223> G-CSF analog

<400> 86

Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
1 5 10 15

Lys Cys Leu Glu Gln Val Ala Lys Ile Gln Gly Asp Gly Ala Ala Leu  
20 25 30

Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
35 40 45

Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
50 55 60

Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
65 70 75 80

Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
85 90 95

Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
100 105 110

Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
115 120 125

Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
130 135 140

Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
145 150 155 160

Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
165 170 175

<210> 87

<211> 175

<212> PRT

<213> Artificial sequence

<220>

<223> G-CSF analog

<400> 87

Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
 1 5 10 15  
 Lys Cys Leu Glu Gln Val Arg Ala Ile Gln Gly Asp Gly Ala Ala Leu  
 20 25 30  
 Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
 35 40 45  
 Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
 50 55 60  
 Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
 65 70 75 80  
 Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
 85 90 95  
 Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
 100 105 110  
 Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
 115 120 125  
 Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
 130 135 140  
 Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
 145 150 155 160  
 Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
 165 170 175

<210> 88  
 <211> 175  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> G-CSF analog

<400> 88  
 Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
 1 5 10 15  
 Lys Cys Leu Ala Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu  
 20 25 30  
 Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
 35 40 45  
 Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
 50 55 60  
 Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
 65 70 75 80  
 Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
 85 90 95  
 Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
 100 105 110

Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
115 120 125

Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
130 135 140

Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
145 150 155 160

Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
165 170 175

<210> 89  
<211> 175  
<212> PRT  
<213> Artificial sequence

<220>  
<223> G-CSF analog

<400> 89  
Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
1 5 10 15

Lys Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Ala Gly Ala Ala Leu  
20 25 30

Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
35 40 45

Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
50 55 60

Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
65 70 75 80

Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
85 90 95

Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
100 105 110

Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
115 120 125

Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
130 135 140

Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
145 150 155 160

Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
165 170 175

<210> 90  
<211> 175  
<212> PRT  
<213> Artificial sequence

<220>  
<223> G-CSF analog

<400> 90  
Met Thr Pro Leu Gly Pro Ala S r Ser Leu Pro Gln Ser Phe Leu Leu  
1 5 10 15  
Lys Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu  
20 25 30  
Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
35 40 45  
Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
50 55 60  
Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
65 70 75 80  
Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
85 90 95  
Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
100 105 110  
Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Glu Ala  
115 120 125  
Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
130 135 140  
Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
145 150 155 160  
Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
165 170 175

<210> 91  
<211> 175  
<212> PRT  
<213> Artificial sequence

<220>  
<223> G-CSF analog

<400> 91  
Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
1 5 10 15  
Lys Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu  
20 25 30  
Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
35 40 45  
Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
50 55 60  
Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
65 70 75 80  
Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
85 90 95  
Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
100 105 110

Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
115 120 125

Pro Ala Leu Gln Pro Thr Gln Gly Ala Glu Pro Ala Phe Ala Ser Ala  
130 135 140

Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
145 150 155 160

Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
165 170 175

<210> 92  
<211> 175  
<212> PRT  
<213> Artificial sequence

<220>  
<223> G-CSF analog

<400> 92  
Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
1 5 10 15

Lys Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu  
20 25 30

Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
35 40 45

Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
50 55 60

Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
65 70 75 80

Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
85 90 95

Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
100 105 110

Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Leu Ala  
115 120 125

Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
130 135 140

Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
145 150 155 160

Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
165 170 175

<210> 93  
<211> 175  
<212> PRT  
<213> Artificial sequence

<220>  
<223> G-CSF analog

<400> 93  
Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
1 5 10 15  
Lys Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu  
20 25 30  
Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
35 40 45  
Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
50 55 60  
Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
65 70 75 80  
Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
85 90 95  
Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
100 105 110  
Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
115 120 125  
Pro Ala Leu Gln Pro Thr Gln Gly Ala Leu Pro Ala Phe Ala Ser Ala  
130 135 140  
Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
145 150 155 160  
Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
165 170 175

<210> 94  
<211> 175  
<212> PRT  
<213> Artificial sequence

<220>  
<223> G-CSF analog

<400> 94  
Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
1 5 10 15  
Lys Ala Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu  
20 25 30  
Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
35 40 45  
Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
50 55 60  
Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
65 70 75 80  
Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
85 90 95  
Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
100 105 110



Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
115 120 125

Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
130 135 140

Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
145 150 155 160

Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
165 170 175

<210> 95

<211> 175

<212> PRT

<213> Artificial sequence

<220>

<223> G-CSF analog

<400> 95

Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Glu Ser Phe Leu Leu  
1 5 10 15

Lys Cys Leu Glu Glu Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu  
20 25 30

Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
35 40 45

Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
50 55 60

Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
65 70 75 80

Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
85 90 95

Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
100 105 110

Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
115 120 125

Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
130 135 140

Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
145 150 155 160

Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
165 170 175

<210> 96

<211> 175

<212> PRT

<213> Artificial sequence

<220>

<223> G-CSF analog

<400> 96  
Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Glu Ser Phe Leu Leu  
1 5 10 15  
Lys Cys Leu Glu Glu Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu  
20 25 30  
Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
35 40 45  
Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
50 55 60  
Cys Pro Ser Glu Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
65 70 75 80  
Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
85 90 95  
Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
100 105 110  
Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
115 120 125  
Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
130 135 140  
Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
145 150 155 160  
Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
165 170 175

<210> 97  
<211> 175  
<212> PRT  
<213> Artificial sequence

<220>  
<223> G-CSF analog

<400> 97  
Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Gly Phe Leu Leu  
1 5 10 15  
Lys Cys Leu Ala Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu  
20 25 30  
Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
35 40 45  
Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
50 55 60  
Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
65 70 75 80  
Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
85 90 95  
Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
100 105 110

Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
115 120 125  
Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
130 135 140  
Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
145 150 155 160  
Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
165 170 175

<210> 98  
<211> 175  
<212> PRT  
<213> Artificial sequence

<220>  
<223> G-CSF analog

<400> 98  
Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
1 5 10 15  
Lys Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu  
20 25 30  
Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
35 40 45  
Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
50 55 60  
Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
65 70 75 80  
Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
85 90 95  
Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
100 105 110  
Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Leu Ala  
115 120 125  
Pro Ala Leu Gln Pro Thr Gln Gly Ala Leu Pro Ala Phe Ala Ser Ala  
130 135 140  
Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
145 150 155 160  
Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
165 170 175

<210> 99  
<211> 175  
<212> PRT  
<213> Artificial sequence

<220>  
<223> G-CSF analog

<400> 99  
Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ala Phe Leu Leu  
1 5 10 15  
Lys Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu  
20 25 30  
Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
35 40 45  
Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
50 55 60  
Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
65 70 75 80  
Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
85 90 95  
Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
100 105 110  
Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
115 120 125  
Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
130 135 140  
Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
145 150 155 160  
Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
165 170 175

<210> 100  
<211> 175  
<212> PRT  
<213> Artificial sequence

<220>  
<223> G-CSF analog

<400> 100  
Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
1 5 10 15  
Ala Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu  
20 25 30  
Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
35 40 45  
Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
50 55 60  
Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
65 70 75 80  
Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
85 90 95

Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
100 105 110  
Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
115 120 125  
Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
130 135 140  
Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
145 150 155 160  
Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
165 170 175

<210> 101  
<211> 175  
<212> PRT  
<213> Artificial sequence

<220>  
<223> G-CSF analog

<400> 101  
Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
1 5 10 15  
Lys Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu  
20 25 30  
Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
35 40 45  
Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
50 55 60  
Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
65 70 75 80  
Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
85 90 95  
Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
100 105 110  
Asp Phe Ala Thr Thr Ile Trp Gln Ala Met Glu Glu Leu Gly Met Ala  
115 120 125  
Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
130 135 140  
Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
145 150 155 160  
Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
165 170 175

<210> 102  
<211> 175  
<212> PRT  
<213> Artificial sequence

<220>  
<223> G-CSF analog

<400> 102  
Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
1 5 10 15  
Lys Cys Leu Glu Ala Val Arg Lys Ile Gln Gly Asp Gly Ala Ala L u  
20 25 30  
Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
35 40 45  
Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
50 55 60  
Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
65 70 75 80  
Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
85 90 95  
Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
100 105 110  
Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
115 120 125  
Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
130 135 140  
Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
145 150 155 160  
Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
165 170 175

<210> 103  
<211> 175  
<212> PRT  
<213> Artificial sequence

<220>  
<223> G-CSF analog

<400> 103  
Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
1 5 10 15  
Lys Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu  
20 25 30  
Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys Ala Pro Glu Glu Leu  
35 40 45  
Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
50 55 60  
Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
65 70 75 80  
Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
85 90 95  
Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
100 105 110

Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
115 120 125

Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
130 135 140

Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
145 150 155 160

Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
165 170 175

<210> 104

<211> 175

<212> PRT

<213> Artificial sequence

<220>

<223> G-CSF analog

<400> 104

Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
1 5 10 15

Lys Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu  
20 25 30

Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
35 40 45

Val Leu Leu Gly Ala Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
50 55 60

Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
65 70 75 80

Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
85 90 95

Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
100 105 110

Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
115 120 125

Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
130 135 140

Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
145 150 155 160

Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
165 170 175

<210> 105

<211> 175

<212> PRT

<213> Artificial sequence

<220>

<223> G-CSF analog

<400> 105

Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
1 5 10 15  
Lys Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu  
20 25 30  
Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
35 40 45  
Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
50 55 60  
Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
65 70 75 80  
Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
85 90 95  
Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Ala Val Ala  
100 105 110  
Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
115 120 125  
Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
130 135 140  
Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
145 150 155 160  
Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
165 170 175

<210> 106  
<211> 175  
<212> PRT  
<213> Artificial sequence

<220>  
<223> G-CSF analog

<400> 106  
Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
1 5 10 15  
Lys Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu  
20 25 30  
Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
35 40 45  
Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
50 55 60  
Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
65 70 75 80  
Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
85 90 95  
Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
100 105 110



Ala Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
115 120 125

Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
130 135 140

Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
145 150 155 160

Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
165 170 175

<210> 107  
<211> 175  
<212> PRT  
<213> Artificial sequence

<220>  
<223> G-CSF analog

<400> 107  
Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
1 5 10 15

Lys Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu  
20 25 30

Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
35 40 45

Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
50 55 60

Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
65 70 75 80

Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
85 90 95

Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
100 105 110

Asp Phe Ala Thr Ala Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
115 120 125

Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
130 135 140

Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
145 150 155 160

Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
165 170 175

<210> 108  
<211> 175  
<212> PRT  
<213> Artificial sequence

<220>  
<223> G-CSF analog

<400> 108  
Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
1 5 10 15  
Lys Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Ala Gly Ala Ala Leu  
20 25 30  
Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
35 40 45  
Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
50 55 60  
Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
65 70 75 80  
Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
85 90 95  
Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Ala Val Ala  
100 105 110  
Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
115 120 125  
Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
130 135 140  
Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
145 150 155 160  
Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
165 170 175

<210> 109  
<211> 175  
<212> PRT  
<213> Artificial sequence

<220>  
<223> G-CSF analog

<400> 109  
Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
1 5 10 15  
Lys Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu  
20 25 30  
Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
35 40 45  
Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
50 55 60  
Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
65 70 75 80  
Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
85 90 95  
Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
100 105 110

Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Ala Leu Gly Met Ala  
 115 120 125  
 Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
 130 135 140  
 Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
 145 150 155 160  
 Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
 165 170 175  
 <210> 110  
 <211> 175  
 <212> PRT  
 <213> Artificial sequence  
 <220>  
 <223> G-CSF analog  
 <400> 110  
 Met Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu  
 1 5 10 15  
 Lys Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu  
 20 25 30  
 Gln Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
 35 40 45  
 Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
 50 55 60  
 Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
 65 70 75 80  
 Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
 85 90 95  
 Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
 100 105 110  
 Asp Val Ala Thr Ala Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
 115 120 125  
 Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
 130 135 140  
 Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
 145 150 155 160  
 Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
 165 170 175